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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number: 07844-0625001
	Application Number 10/716,782	Filed November 18, 2003
	First Named Inventor Scott D. Cohen, et al.	
	Art Unit 2624	Examiner Andrae Allison

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

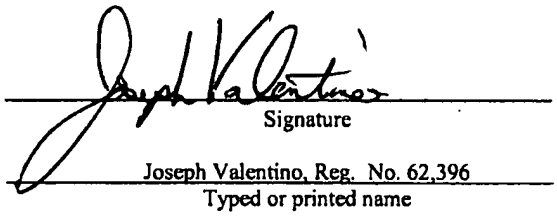
I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☒ attorney or agent of record
(Reg. No. 62,396)

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34



Signature

Joseph Valentino, Reg. No. 62,396
Typed or printed name

(212) 765-5070
Telephone number

June 25, 2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below'.

☒ Total of 1 forms are submitted.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Scott D. Cohen, et al.	Art Unit	: 2624
Serial No.	: 10/716,782	Examiner	: Andrae Allison
Filed	: November 18, 2003	Conf. No.	: 6167
Title	: IDENTIFYING ONE OR MORE OBJECTS WITHIN AN IMAGE		

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Pursuant to the Pre-Appeal Brief Conference Program, a request for a review of identified matters on appeal is hereby submitted in view of clear legal or factual deficiencies in the rejections. All rights to address additional matters in the full appeal brief are hereby reserved. This request is being filed with a Notice of Appeal.

Independent claim 1 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over the Takahashi patent (U.S. Patent No. 6,665,439) in view of the Westman et al. reference. Independent claims 17, 33 and 40 stand rejected as allegedly being unpatentable over the Takahashi patent in view of the Prakash et al. patent (US Patent No. 6,778,698).

The present application is directed towards identifying one or more objects embedded within an image (*see* p. 4, line 5). In some implementations, identification of the one or more objects includes identifying edge pixels and non-edge pixels within an input image, finding both connected components (which include only edge pixels) and substantially connected components (which include edge pixels and non-edge pixels) that correlate with the one or more objects and then extracting the location of the one or more objects based on the connected and substantially connected components (*see* pp. 8-9. Accordingly, in some implementations, the boundary of an object in an image can be identified even if the boundary includes a discontinuity.

For example, FIG. 5A of the present application illustrates an example image in which a portion 410 of the edge pixel map (as shown in FIG. 4B) is missing from the connected component 500 because the portion 410 is surrounded entirely by non-edge pixels. However, by identifying both connected components and substantially connected components (which include

non-edge pixels), the entire edge pixel map, including portion 410, can be determined as shown in FIG. 5B.

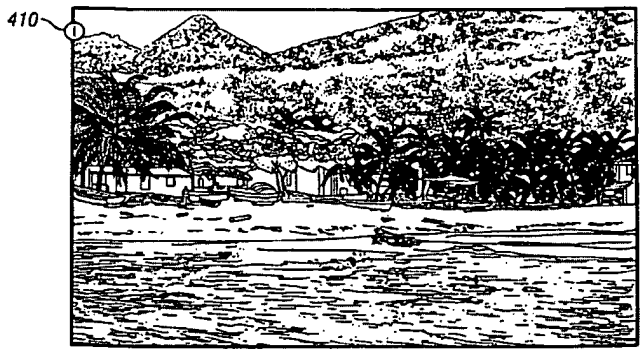


FIG. 4B

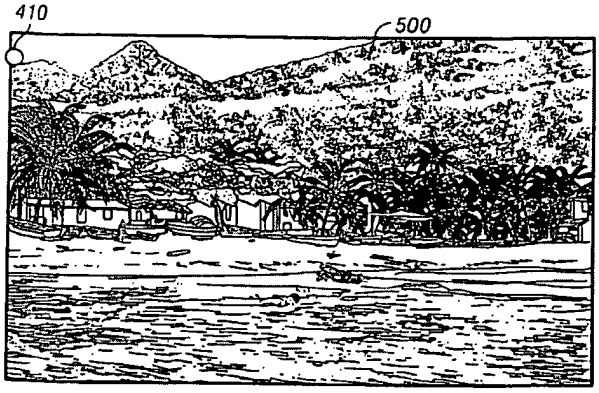


FIG. 5A

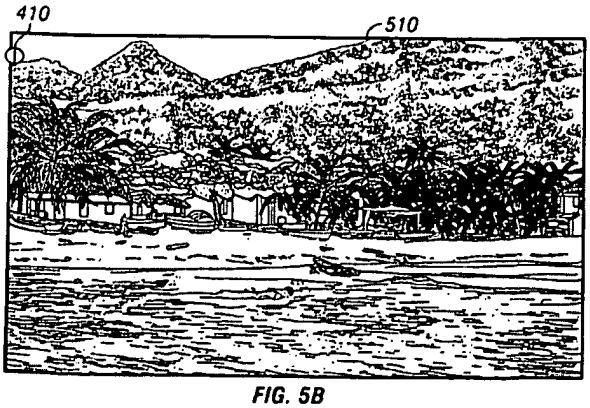


FIG. 5B

Independent claim 1 recites a computer-implemented method of identifying one or more objects within an image, in which the method includes "selecting an edge pixel from [a] plurality of edge pixels" and "identifying a substantially connected component." The substantially connected component has both "non-edge pixels" as well as "substantially connected edge pixels" that are substantially connected to the selected edge pixel. The number of non-edge pixels in the substantially connected component is based on a level of tolerance for non-edge pixels. Independent claims 17, 33 and 40 recite similar features. The foregoing features, however, are not taught by the cited art alone or in combination

The Office action concedes that the Takahashi patent fails to disclose "identifying a substantially connected component" that includes "non-edge pixels," in which the number of non-edge pixels in the substantially connected component is "based on a level of tolerance for non-edge pixels," as recited by claim 1, but relies on the Westman et al. reference for those feature (*see* final Office action, pgs. 4-5).

The Westman et al. reference discloses a procedure for image segmentation in which each successive stage of the procedure includes merging adjacent component regions such that a coarse analysis of the image can be obtained (*see* Westman et al. at p. 796, section 2, ¶ 4). During the first stage, the image is segmented into "basic connected components based on connectivity" of adjacent pixels. The components are determined by a test that compares a threshold with a measure of grey-level or color-space distance between adjacent pixels (*id.*, at p. 796, section 2, ¶ 5).

The Office action alleges that segmenting an image into basic components (as disclosed in the Westman et al. reference) corresponds to the claimed "identifying a substantially connected component that includes non-edge pixels" (*see* final Office action at pp. 4-5, emphasis added). Applicant respectfully disagrees. Applicant notes that, under current law, "[a] reference is only good for what it clearly and definitely discloses." (*see In re Hughes*, 145 U.S.P.Q. 467, 471 (C.C.P.A. 1965); *In re Moreton*, 129 U.S.P.Q. 227, 230 (C.C.P.A. 1961)). The Westman et al. patent, however, fails to disclose or render obvious the limitations missing from the Takahashi patent. Instead, the Westman et al. reference merely discloses that the image is segmented into basic connected components "based on connectivity" of adjacent pixels. The

connectivity of the adjacent pixels is based on a "test of differences of their local grey-level or color-space properties" (*see* Westman et al. at p. 796, section 2, ¶ 5). There is no disclosure or suggestion that the basic connected components include "non-edge pixels" as recited by pending claim 1. Nor is there any disclosure in the Westman et al. reference that the segmentation of components based on connectivity includes "identifying a substantially connected component that includes non-edge pixels," as further recited by pending claim 1.

Indeed, the Office action notes that a connected pixel region is a region of "adjacent pixels which share the same set of intensity values" (*see* final Office action at p. 5, emphasis added). Accordingly, based on the Office action's interpretation of a connected pixel region, Applicant fails to see how the basic connected components of the Westman et al. reference could include both edge pixels and non-edge pixels.

Furthermore, Applicant submits that the Office action has misinterpreted the Applicant's arguments submitted in a reply (*see* Reply to Office action, 1/5/2009). In particular, the Office action alleges that Applicant argued one of ordinary skill in the art would conclude, at most, that each basic connected component includes only "non-edge pixels." This is incorrect. Instead, Applicant submitted that because the Westman et al. reference fails to disclose or suggest the existence of non-edge pixels in the basic connected component, one of ordinary skill in the art would, at most, conclude that each connected component includes "only edge-pixels," in contrast to the limitations recited in pending claim 1.

The Prakash et al. patent discloses a technique to segment an image that includes a multi-scale segmentation process operating on an image and a set of edge chains (*see* col. 3, line 61 – col. 4, line 11). The relied upon portion of the Prakash et al. patent does not, however, remedy "identifying a substantially connected component that includes non-edge pixels" as recited in the independent claims.

Since the Takahashi patent, the Westman et al. reference and the Prakash et al. patent, alone or in combination, fail to disclose or render obvious the foregoing limitations of the pending claims, it is impossible to combine the Takahashi patent, the Westman et al. reference and/or the Prakash et al. patent to meet the limitations of the rejected claims. Accordingly, for at least the foregoing reasons, there is a clear legal or factual deficiency in the rejection of pending claims 1, 17, 33 and 40. Thus, the rejection of pending claims 1, 17, 33 and 40 under 35 U.S.C.

§ 103(a) should be withdrawn and claims 1, 17, 33 and 40 and their respective dependent claims are in condition for allowance.

Conclusion

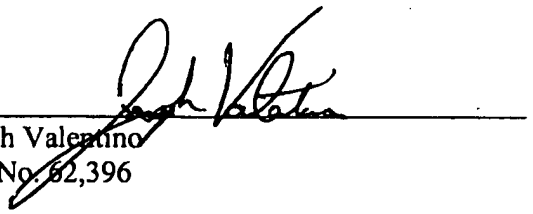
In sum, the examiner has failed to address the actual requirements of the claims and read a clear and fundamental limitation out of the claims—a plain legal error. The rejections of record are clearly improper and without basis and should be withdrawn. Moreover, it is respectfully suggested that all of the claims should be in condition for allowance, and a formal notice of allowance is respectfully requested.

The absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

The fee for the Notice of Appeal is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06 1050.

Respectfully submitted,

Date: 6/25/09



Joseph Valentino
Reg. No. 62,396

Fish & Richardson P.C.
USPTO Customer No. 21876
Telephone: (212) 765-5070
Facsimile: (877) 769-7945